Gulf of Maine Ocean Observing System (GoMOOS)

Region: Gulf of Maine – Maine, Massachusetts, New Hampshire, New Brunswick, Nova Scotia,
Date Project Initiated: July 2001
(current number: NA04NOS4730215)

Brief Project Summary

The Gulf of Maine Ocean Observing System (GoMOOS) is a regional user-driven organization that is responsive to the needs of the fishermen, scientists, managers, educators, and others that rely on timely ocean and weather information about the Gulf of Maine. GoMOOS supports the sustained operation of a system of oceanographic buoys, land-based radar stations, satellite products, and computer modeling that provides continuous real-time observations over the Web. GoMOOS works closely with its end users to deliver products and services that address their information needs. GoMOOS also leads a regional effort to integrate data from other organizations that collect and manage environmental data about the Gulf of Maine.

IOOS INTEGRATED OCEAN OBSERVING SYSTEM

This project is contributing to the Integrated Ocean Observing System (IOOS) by

- Representing a diverse user community – the GoMOOS Board of Directors draws from over 40 dues-paying member organizations
- Providing data from a managed partnership of regional research institutions operating and innovating continuous buoy-data systems, an ocean modeling system, satellite products, and a coastal HF radar system
- Integrating regional data streams from the National Oceanic and Atmospheric Administration (NOAA), U.S. Environmental Protection Agency, U.S. Geological Survey, and more than 20 other federal, state, and local organizations
- Coordinating the effort to develop a Northeast Regional Association of Coastal Ocean Observing Systems

Key Accomplishments

Supporting Safe and Efficient Marine Operations and Commerce

- For that last five years, GoMOOS has maintained and operated an innovative oceanographic buoy system in the Gulf of Maine that transmits hourly ocean and weather information to a wide variety of end users. Commercial and recreational mariners, the U.S. Coast Guard, and many others have come to rely on the GoMOOS buoy system as a critical source of information that they use daily to make operational decisions. Testimonials from GoMOOS users:
  - Harbor pilot: "I use real-time data for go/no-go decisions on safe vessel transit."
  - Fishermen: "I log onto your Web site twice, sometimes three times a day. The real-time information is much more valuable than the marine forecast to find out what it's doing outside and also looking at trends."
  - Naval Operations: SPAWAR Systems uses GoMOOS data services for "operational readiness . . . to support requirements for at-sea environmental issues and encroachment concerns."
  - Aquaculture companies use GoMOOS data on ocean temperature to mitigate frequent superchill conditions, which previously destroyed $5 million of crop per event; they've had "no incidents in 5 years with GoMOOS."

Integrating Regional Data

- GoMOOS is advancing regional data integration at a grassroots level as the host of the Gulf of Maine Ocean Data Partnership (GoMODP). GoMODP consists of 22 organizations in the Gulf of Maine region and beyond that collect, manage, and disseminate data on the Gulf of Maine. The partnership is focusing on four priority areas including data assurance, data discovery, data accessibility, and data interoperability. Accomplishments to date include a comprehensive inventory of the data management and technology

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capabilities of participants and a metadata workshop that resulted in most partners registering discovery metadata with NASA's global change master directory. GoMODP is an important component of the developing Northeast Regional Association of Coastal Ocean Observing Systems.

Ecosystem-Based Management

- *Gulf of Maine Northern Shrimp Information System*
  The northern shrimp population in the Gulf of Maine is a dynamic fishery and believed to be in part dependent on regional oceanographic conditions. Until recently there were no tools available to managers for integrating shrimp fishery data with related environmental data. Working in partnership with the Maine Department of Marine Resources, NOAA's Northeast Fisheries Science Center and the Atlantic States Marine Fisheries Commission (ASMFC) Northern Shrimp Technical Committee, GoMOOS developed the Northern Shrimp Information System: *www.gomoos.org/shrimp/*. This system is a prototype tool for integrating fishery catch data with key environmental data. A state fisheries manager indicated, "this information will enable managers to make decisions on harvest seasons and areas that will better protect the resource, while allowing fishermen to maximize their harvest and economic returns."

- ***Predicting Right Whale Births in the Gulf of Maine***
  With only some 300 individuals alive today, the North Atlantic right whale is critically endangered. Using data from GoMOOS, scientists recently elucidated a "chain reaction" of changes in the atmosphere and the ocean that ultimately affects the birthrate of right whales. Using computer models developed by these scientists, GoMOOS developed a Web-based forecast system for North Atlantic right whale births that is based on data from GoMOOS buoys and other sources: *www.gomoos.org/environmentalprediction/*. This type of predictive capability shows the value of the long-term and continuous measurements made by GoMOOS.

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